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東京大学理学部 1 号館西棟 11 階 1109 号室 (天文学専攻会議室) にて

“Old Supernova Dust Factory Revealed at the Galactic Center with  
SOFIA/FORCAST”

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Dust formation in supernova ejecta is currently the leading candidate to explain the large quantities of dust observed in the distant, early universe. However, it is unclear whether the ejecta-formed dust can survive the hot interior of the supernova remnant (SNR). In this talk, I will present infrared observations of  $\sim 0.02$  solar masses of warm ( $\sim 100$  kelvin) dust seen near the center of the  $\sim 10,000$ -year-old Sagittarius A East SNR at the Galactic center. Our findings indicate the detection of dust within an older SNR that is expanding into a relatively dense surrounding medium (electron density  $\sim 10^3 \text{ cm}^{-3}$ ) and has survived the passage of the reverse shock. The results suggest that supernovae may be the dominant dust-production mechanism in the dense environment of galaxies of the early universe.